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Mr. Parsons

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF AGRICULTURAL ENGINEERING

S. H. McCORRY, CHIEF.

MONTHLY NEWS LETTER

WASHINGTON, D.C., SEPTEMBER 22, 1925.

DRAINAGE

ONLY ONE DRAINAGE ENGINEER HAS SUBMITTED ITEMS FOR THIS MONTH'S ISSUE OF THE NEWS LETTER. ALL ARE URGED TO SEND IN ITEMS OF INTEREST RESPECTING THEIR MOVEMENTS AND WORK. THESE MUST BE VERY CONCISE, HOWEVER, AS THE LETTER IS LIMITED TO FOUR PAGES FOR THE ENTIRE DIVISION.

R. D. MARSDEN RETURNED TO WASHINGTON ABOUT SEPTEMBER 1 FROM AN EXTENDED TRIP THROUGH THE MIDDLE WEST, MADE FOR THE PURPOSE OF STUDYING THE ECONOMY OF INSTALLING LARGE DRAIN TILE.

GEORGE R. BOYD COMPLETED A SERIES OF PYROTOL DEMONSTRATIONS IN NORTH CAROLINA AND SOUTH CAROLINA. HE REPORTS GREAT INTEREST IN PYROTOL IN THESE STATES.

A NEW PROJECT ON THE FLOW OF WATER AROUND BENDS IN OPEN CHANNELS HAS BEEN APPROVED. THIS INVESTIGATION WILL BE MADE BY D. L. YARNELL IN COOPERATION WITH THE IOWA STATE UNIVERSITY AT THE HYDRAULIC LABORATORY, IOWA CITY.

MR. YARNELL HAS SUBMITTED A SHORT ARTICLE ON "THE EFFECT OF THE ROUGHNESS OF WEIR PLATES UPON THE DISCHARGE", COMPRISING THE GIST OF J.W. HOWE'S THESIS ON WEIR DISCHARGE. THE INVESTIGATION WAS MADE ON A SHARP-CRESTED WEIR OF THE SUPPRESSED TYPE WITH A 2-FOOT CREST, A TOTAL OF 450 TESTS BEING MADE. TESTS WERE RUN ON A NORMAL WEIR, A SMOOTH VARNISHED WEIR PLATE WITH AND WITHOUT A SMOOTH BULKHEAD, THE WEIR PLATE COATED WITH OTTAWA SAND SET IN SHELLAC, AND THE WEIR PLATE COATED WITH 4 TO 8 MESH GRAVEL SET IN SHELLAC, THE GRAVEL BEING PLACED AT VARIOUS DISTANCES FROM THE CREST. THE FOLLOWING CONCLUSIONS WERE DRAWN FROM A STUDY OF THE RESULTS:

- (1) THE GREATEST VARIATION IN DISCHARGE DUE TO ROUGHNESS (A SMOOTH WEIR PLATE COMPARED TO ONE GRAVELED WITHIN $1/4$ INCH OF THE CREST) AMOUNTED TO 3 PER CENT.
- (2) THE EFFECT OF THE ROUGHNESS ON THE WEIR PLATE WAS NOT NOTICEABLE IF THE ROUGHNESS OCCURRED MORE THAN 2 OR 3 INCHES BELOW THE TOP.
- (3) VARIATION IN VELOCITY DISTRIBUTION IN THE CHANNEL OF APPROACH CAUSED A VARIATION IN DISCHARGE OF AS MUCH AS 4 PER CENT.
- (4) THE EXPERIMENTS ON A NORMAL WEIR CHECKED THE REYDOCK FORMULA WITHIN LESS THAN 1 PER CENT BUT WERE FROM 1 TO 3 PER CENT BELOW THE BAZIN FORMULA.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
DIVISION OF HIGHWAY ENGINEERING

WASHINGTON, D.C.

MAY 1917

WASHINGTON, D.C., December 12, 1916.

Dear Sir:

Only one change should be permitted in the name of the letter. All the letters are to be in the name of the Bureau of Public Roads, and the letter is limited to four pages for the entire division.

The letter should be addressed to the Bureau of Public Roads, and the letter should be addressed to the Bureau of Public Roads, and the letter should be addressed to the Bureau of Public Roads.

George H. Ross, Director, Bureau of Public Roads, Washington, D.C., is the person to whom the letter should be addressed.

A new project on the part of the Bureau of Public Roads is now being carried out. This project is now being carried out by the Bureau of Public Roads, and the letter should be addressed to the Bureau of Public Roads.

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IRRIGATION

SHORT FIELD TRIPS WERE MADE DURING AUGUST BY R. L. PARSHALL, L. T. JESSUP, L. M. WINSOR, H. F. BLANEY, W. A. HUTCHINS, AND D. W. BLOODGOOD, FOR THE PURPOSE OF SECURING DATA TO BE USED IN A REVISION OF F. B. 882, "IRRIGATION OF ORCHARDS", BY DR. SAMUEL FORTIER.

W. W. McLAUGHLIN AND F. C. SCOBEY VISITED WESTERN NEVADA AT THE REQUEST OF THE ACTING DEPUTY CHIEF ENGINEER OF THE BUREAU, TO ASSIST IN CHECKING THE LOCATION OF A PROPOSED FEDERAL AID HIGHWAY SOUTH OF LOVELOOK ACROSS THE BARREN SINK FORMERLY KNOWN AS HUMBOLDT LAKE. THE SPECIFIC PROBLEMS STUDIED RELATE TO THE ADAPTABILITY OF THE FINE LACUSTRINE DEPOSITS FOR ROAD MATERIAL AND THE EFFICACY OF THE DRAINAGE CANAL IN REMOVING ANY POSSIBLE FLOOD FLOW RAPIDLY ENOUGH TO PREVENT WATERLOGGING OR ACTUAL SUBMERGENCE OF THE ROADWAY.

R. G. HEMPHILL MADE A TRIP TO THE LOWER RIO GRANDE VALLEY, TEXAS, TO SECURE INFORMATION ON THE IRRIGATION OF COTTON. HE REPORTS, ALSO, THAT AS A RESULT OF INCREASED STREAM FLOW IT WAS POSSIBLE TO SECURE MORE THAN 700 SAMPLES OF SILT-LADEN RIVER WATER FROM THE BRAZOS RIVER AND TRIBUTARIES. TESTS ARE TO BE MADE OF THE ACCURACY OF THE METHOD USED IN ARRIVING AT PERCENTAGES BY VOLUME, CONSISTING OF ALLOWING AN 8 OUNCE SAMPLE OF WATER TO SETTLE FOR A WEEK IN A 3/4-INCH GLASS TUBE.

A. T. MITCHELSON VISITED POINTS IN COLORADO, UTAH, AND IDAHO TO STUDY METHODS OF CLEANING AND LINING CANALS AND TO CONFER WITH LOCAL REPRESENTATIVES OF THIS DIVISION.

L. M. WINSOR CONDUCTED SURVEYS COVERING GRAVEL CONTROL WORKS AT SEVEN POINTS IN UTAH. HE ALSO MADE AN EXAMINATION OF CONDITIONS UNDER WHICH TESTS ARE BEING MADE AT DELTA, UTAH, TO DETERMINE THE PRACTICABILITY OF EARLY IRRIGATION IN ITS EFFECT UPON CROP GROWTH.

UNDER THE DIRECTION OF F. L. BIXBY, MESSRS. HARDMAN AND STOCKWELL ARE MAKING TESTS OF WELLS IN SOUTHERN NEVADA.

A. L. FELLOWS ATTENDED A CONFERENCE IN DENVER ON THE CONTROL AND UTILIZATION OF THE FLOOD WATERS OF THE ARKANSAS RIVER AND TRIBUTARIES. HE HELD A FURTHER CONFERENCE WITH AGRICULTURAL AGENTS OF SEVERAL RAILROADS REGARDING IRRIGATION OF THE GREAT PLAINS. ON THE LATTER PROJECT HE ATTENDED A MEETING OF THE COMMISSIONERS OF IRRIGATION OF KANSAS, NEW MEXICO, OKLAHOMA, AND TEXAS, HELD AT AMARILLO, TEXAS. HE ALSO MADE A TRIP TO PINE, COLORADO, TO INSPECT WORK DONE ON A SMALL EARTH DAM BEING CONSTRUCTED UNDER HIS DIRECTION, HIS INTEREST BEING MAINLY IN THE AMOUNT OF PERCOLATION THROUGH EARTH DAMS.

J. C. MARR MADE GROUND WATER SURVEYS ON THE ALKALI RECLAMATION EXPERIMENTAL PLOT ON THE HELMS RANCH NEAR CALDWELL, IDAHO.

R. A. HART MADE TRIPS TO SEVERAL DRAINAGE DISTRICTS IN UTAH IN COMPANY WITH A. S. DAWSON OF THE CANADIAN PACIFIC RAILWAY. MR. HART ALSO

IRRIGATION

These field tests were made during August by R. L. Harshbarger, L. T. Jensen, L. M. Wilson, H. F. Blaney, W. A. Doolittle, and W. B. Doolittle, for the purpose of securing data to be used in a revision of F. S. 285, "Irrigation of Orchards", by Dr. Samuel Fortney.

W. B. Doolittle and F. C. Doolittle visited western Nevada at the request of the Nevada State Engineer, Mr. C. H. Doolittle, to assist in checking the location of a proposed Federal and Highway South of Lovelock across the Carson Sink formerly known as Humboldt Lake. The results of the investigation are given in the report of the Nevada State Engineer, dated August 1, 1925, and the efficacy of the drainage canal in removing the water from the sink is shown in the report of the Nevada State Engineer, dated August 1, 1925.

R. L. Harshbarger made a trip to the Lower Rio Grande Valley, Texas, to secure information on the irrigation of cotton. He reported also that as a result of increased stream flow it was possible to secure more than 100 carloads of cotton from the Lower Rio Grande Valley and that the results of the investigation are given in the report of the Nevada State Engineer, dated August 1, 1925.

A. T. Doolittle visited points in Colorado, Utah, and Idaho to study methods of planning and laying out canals and to confer with local representatives of the Division.

L. M. Wilson conducted surveys covering gravel control works at seven points in Utah. He also made an examination of conditions under which tests are being made at Delta, Utah, to determine the practicability of early irrigation in the effect upon crop growth.

Under the direction of F. L. Blaney, Messrs. Harshbarger and Doolittle are making tests of water in southern Nevada.

A. T. Doolittle attended a conference in Denver on the control and utilization of the flood waters of the Arkansas River and tributaries. He held a further conference with the Arkansas River and tributaries. He also made an examination of the Great Plains. In the latter project he attended a meeting of the Commission of Irrigation of Kansas, New Mexico, Oklahoma, and Texas, held at Oklahoma, Texas. He also made a trip to the Colorado River to inspect work done on a small earth dam controlled under his direction. His interest in the project of irrigation is shown in the report of the Nevada State Engineer, dated August 1, 1925.

Dr. Doolittle conducted water surveys on the small irrigation experimental field at the Nevada State Engineer's station, Reno, Nevada.

Dr. Doolittle made a trip to several irrigation districts in Utah to study the conditions of the canals and ditches. He also made a trip to the Colorado River to inspect work done on a small earth dam controlled under his direction. His interest in the project of irrigation is shown in the report of the Nevada State Engineer, dated August 1, 1925.

VISITED BANIDA, IDAHO AND LOGAN, UTAH, IN CONNECTION WITH INVESTIGATIONAL WORK BEING CONDUCTED IN FRANKLIN COUNTY DRAINAGE DISTRICT No. 3, IDAHO.

R. L. PARSHALL CONFERRED WITH IRRIGATION ENGINEERS AND STATE HYDROGRAPHERS IN WESTERN COLORADO RELATIVE TO THE USE OF THE IMPROVED VENTURI FLUME UNDER CONDITIONS WHICH MAKE THE RATING FLUME AND THE OLD STANDARD WEIR IMPRACTICAL; THAT IS, WHERE DITCHES OF RELATIVELY SMALL CAPACITY HAVE STEEP GRADES WHICH RESULT IN HIGH VELOCITIES THROUGH THE RATING FLUMES AND EXCESS VELOCITY OF APPROACH TO THE WEIRS. ARRANGEMENTS WERE MADE TO TRY OUT THE IMPROVED VENTURI FLUME ON THE FOREST DITCH NEAR CEDAR EDGE.

T. C. ADAMS CONTINUED HIS FIELD STUDY OF THE REQUIRED CAPACITY OF DRAINS FOR IRRIGATED LAND IN UTAH AND COLORADO UNDER THE DIRECTION OF R. A. HART. HE WILL COVER A NUMBER OF STATES IN THIS STUDY.

L. T. JESSUP VISITED POINTS IN YAKIMA VALLEY AND KITTITAS VALLEY, WASHINGTON, IN COMPANY WITH W. W. WEIR, TO STUDY THE RESULTS OF DRAINAGE IN THESE LOCALITIES.

D. W. BLOODGOOD ACCOMPANIED DIRECTOR GARCIA OF THE NEW MEXICO STATION, AND OTHERS, TO THE NEW COLLEGE CATTLE RANCH NEAR JORNADA RANGE RESERVE TO SELECT A SUITABLE LOCATION FOR PROPOSED FLOOD WATER STUDIES IN COOPERATION WITH THE ANIMAL HUSBANDRY DEPARTMENT. MR. BLOODGOOD AND HIS ASSISTANT, MR. CURRY, SPENT CONSIDERABLE TIME DURING THE LAST PART OF THE MONTH VISITING THE NORTHERN PART OF NEW MEXICO TO ASSIST SEVERAL COUNTY AGENTS WITH THEIR IRRIGATION PROBLEMS.

RURAL ENGINEERING

PLANS AND SPECIFICATIONS HAVE BEEN DRAWN UP FOR THE OAKVILLE EXPERIMENTAL VINEYARD, CALIFORNIA.

PLANS ARE BEING DRAWN FOR A GREEN HOUSE TO BE BUILT AT THE ARLINGTON FARM FOR SUGAR PLANT INVESTIGATIONS.

DRAWINGS HAVE BEEN COMPLETED FOR TWO FOX HOUSES AND PENS FOR GENERAL DISTRIBUTION.

G. M. WARREN IS CONTINUING THE PREPARATION OF ILLUSTRATIONS FOR MOTION PICTURE FILMS SHOWING SIMPLE FARM WATER SYSTEMS.

C. D. KINSMAN RETURNED TO WASHINGTON SEPT. 8 FROM A TRIP TO THE GREAT PLAINS STATES IN CONNECTION WITH THE STUDY OF HAYING METHODS, THIS STUDY BEING MADE IN COOPERATION WITH THE BUREAU OF AGRICULTURAL ECONOMICS.

PERSONAL

CARL ROHWER WAS RESTORED TO THE ROLLS ON SEPTEMBER 1 AFTER A PROLONGED ABSENCE ON ACCOUNT OF ILLNESS. HE RETURNED TO FORT COLLINS, COLO., LATE IN AUGUST.

visited Santa Fe, Santa and Laguna, Utah, in connection with investigation work being conducted in Santa Fe County drainage district No. 5, Santa Fe.

Mr. J. P. Marshall, connected with irrigation engineering and state hydrologist in Santa Fe, is assisting in the use of the improved Venturi flume which makes the water flow and the old standard flume is obsolete; that is, where there is a relatively small flow of water, the Venturi flume is more accurate than the old standard flume. Mr. Marshall is also assisting in the use of the Venturi flume in the study of the flow of water in the Santa Fe River.

Mr. J. P. Marshall is also assisting in the study of the flow of water in the Santa Fe River, and is also assisting in the study of the flow of water in the Santa Fe River.

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RURAL ENGINEERING

Plans and specifications have been drawn up for the drainage of the Santa Fe River, and is also assisting in the study of the flow of water in the Santa Fe River.

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PERSONAL

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L. M. WINSOR HAS BEEN TRANSFERRED TEMPORARILY FROM LOGAN, UTAH, TO THE BERKELEY OFFICE FOR THE PURPOSE OF WRITING REPORTS ON THE COOPERATIVE WORK IN UTAH DURING THE PAST 10 YEARS. THESE REPORTS WILL INCLUDE STUDIES RELATIVE TO THE DEVELOPMENT OF GROUND WATER FOR IRRIGATION, THE CONSOLIDATION AND REORGANIZATION OF IRRIGATION ENTERPRISES AND GRAVEL CONTROL STUDIES.

R. A. HART HAS BEEN ELECTED VICE-CHAIRMAN OF THE IRRIGATION AND DRAINAGE COMMITTEE OF THE SALT LAKE CITY CHAMBER OF COMMERCE.

R. B. GRAY OF CALIFORNIA HAS BEEN APPOINTED ASSOCIATE AGRICULTURAL ENGINEER, EFFECTIVE SEPTEMBER 15. HE WILL TAKE UP THE STUDY OF DISTRIBUTING MACHINERY FOR CONCENTRATED FERTILIZERS, WHICH INVESTIGATION HAS BEEN CARRIED ON FOR THE PAST YEAR BY M.A.R. KELLEY AT THE ARLINGTON FARM. MR. KELLEY WILL DEVOTE HIS TIME TO OTHER WORK.

REPORTS

THE WASHINGTON OFFICE HAS RECEIVED THE FOLLOWING REPORTS:

THE COMPARATIVE COST OF PUMPING DRAINAGE WATER IN THE UPPER MISSISSIPPI VALLEY BY PLANTS USING ELECTRIC MOTORS, STEAM ENGINES AND DIESEL TYPE OIL ENGINES AS PRIME MOVERS. BY FRED F. SHAFER.

GROUNDWATER INVESTIGATIONS AT THE BLACK LAND STATION OF THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE, WENONA, N.C., BY F. O. BARTEL.

GROUNDWATER INVESTIGATIONS AT THE NISSEN FARMS, INC., TERRA CEIA, N. C., BY F. O. BARTEL.

GROUNDWATER INVESTIGATIONS AT THE COASTAL PLAIN STATION OF THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE, WILLAR, N.C., BY F. O. BARTEL.

FLOW OF WATER IN 54-INCH CONCRETE PIPE LINE AT DENVER, COLO., BY F. O. SCOBEE.

THE BERKELEY OFFICE HAS RECEIVED A REPORT ON "THE REQUIRED CAPACITY OF DRAINS FOR IRRIGATED LANDS", BY R. A. HART AND T. C. ADAMS, ALSO A REPORT ON "FARM SURVEY OF THE DURHAM STATE LAND SETTLEMENT, CALIFORNIA", BY R. P. TEELE AND P. A. EWING.

R. A. HART HAS PREPARED A REPORT OF A STUDY OF DRAINAGE DISCHARGE IN THE NORTH BENCH DRAINAGE DISTRICT AT BASIN, WYOMING.

H. F. BLANEY IS THE AUTHOR OF AN ARTICLE ENTITLED "COST OF IRRIGATION WATER IN CALIFORNIA", IN THE AUGUST ISSUE OF "MODERN IRRIGATION".

IN THE PROCEEDINGS OF THE A. S. C. E. FOR SEPTEMBER, 1925, ARE TWO ARTICLES BY MEMBERS OF THIS DIVISION, ONE ON "THE IMPROVED VENTURI FLUME", BY R. L. PARSHALL AND THE OTHER ON "PERMISSIBLE CANAL VELOCITIES", BY SAMUEL FORTIER AND FRED C. SCOBEE. THE AUTHORS OF THE LATTER ARTICLE DESIRE TO CALL ATTENTION OF ALL ENGINEERS IN THIS DIVISION TO THE ARTICLE IN ORDER TO INVITE A FULL DISCUSSION.

...has been transferred temporarily from ...
to the Berkeley office for the purpose of ...
active work in Utah during the past 10 years. These reports will include
studies relative to the development of ...
consolidation and reorganization of ...
trial studies.

R. A. Hart has been elected vice-chairman of the ...
drainage committee of the Salt Lake City Chamber of Commerce.

R. E. Gray of California has been appointed associate agricultural
engineer, effective September 15. He will take up the study of
drainage machinery for concentrated fertilizers, which investigation was
carried on for the past year by W. B. ...
Kelley will devote his time to this work.

REPORTS

THE WASHINGTON OFFICE HAS RECEIVED THE FOLLOWING REPORTS:
THE COMPARATIVE COST OF ...
REPORT VALUED BY PLANTS USING ...
TYPE OF ENGINE AS ...
SALMONDARY INVESTIGATION OF THE ...
CAROLINA DEPARTMENT OF AGRICULTURE, ...
INVESTIGATION OF THE ...
N. C. ...
INVESTIGATION OF THE ...
NORTH CAROLINA DEPARTMENT OF AGRICULTURE, ...
FLOW OF WATER IN ...
P. O. ...
THE ...
REPORT ON ...
BY R. P. ...
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